

Remarks

Claims 1-3, 5-7, 10-18, 20-26 and 28-32 are pending in this application. In a final Office Action dated January 26, 2005, the Examiner rejected claims 1, 2, 5, 10, 11, 13, 14 and 31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,069,890 to White *et al.* (henceforth, White ,890) in view of U.S. Patent No. 5,933,490 to the same White *et al.* (henceforth, White '490). The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of U.S. Patent Appl. Pub. No. 2003/0165231 to Singh. The Examiner rejected claims 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of U.S. Patent No. 6,532,235 to Benson *et al.* (henceforth, Benson). The Examiner rejected claim 12 under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of U.S. Patent Appl. Pub. No. 2002/0016926 to Nguyen *et al.* (henceforth, Nguyen). The Examiner rejected claims 15, 16, 21-26, 28 and 32 under 35 U.S.C. § 103(a) as being unpatentable over "Admitted prior art" in view of White '890 and White '490. The Examiner rejected claims 17, 18, 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over "Admitted prior art" in view of White '890 and White '490 and in further view of Benson. The Examiner rejected claim 20 under 35 U.S.C. § 103(a) as being unpatentable over "Admitted prior art" in view of White '890 and White '490 and in further view of Nguyen. Applicants believe claims 1-3, 5-7, 9-18, 20-26 and 28-32 are patentable over the cited art and respectfully request reconsideration in light of the following arguments.

General Remarks

In none of the prior art has the Examiner found any teaching or suggestion for a gateway which takes in telephone calls over a multi-line hunt group and sends the voice and signaling information over a communication network such as the Internet. Until the Examiner finds such a teaching or fair suggestion, the Examiner has failed to establish a *prima facie* case of obviousness for at least some of the pending claims.

Claims 1-14

Claim 1 provides a communication system including an IP-enabled communication network, at least one remote site connected to the communication network and at least one service site connected to the communication network. The remote site includes a plurality of subscribers, a switch interconnecting the plurality of subscribers, at least one multi-line hunt group connected to the switch and a gateway. Each multi-line hunt group includes a plurality of voice communication lines and at least one signaling line carrying signaling data. The gateway receives the plurality of voice communication lines and the at least one signaling line for each multi-line hunt group and interfaces each multi-line hunt group and the communication network. Each service site includes a service platform providing voice services, a switch connected to the service platform, at least one multi-line hunt group connected to the switch, and a gateway interfacing each multi-line hunt group and the communication network.

The Examiner rejected claim 1 as an obvious combination of White '490 and White '890. The Examiner uses White '890 as the base reference, in particular Figure 8, which is reproduced as follows:

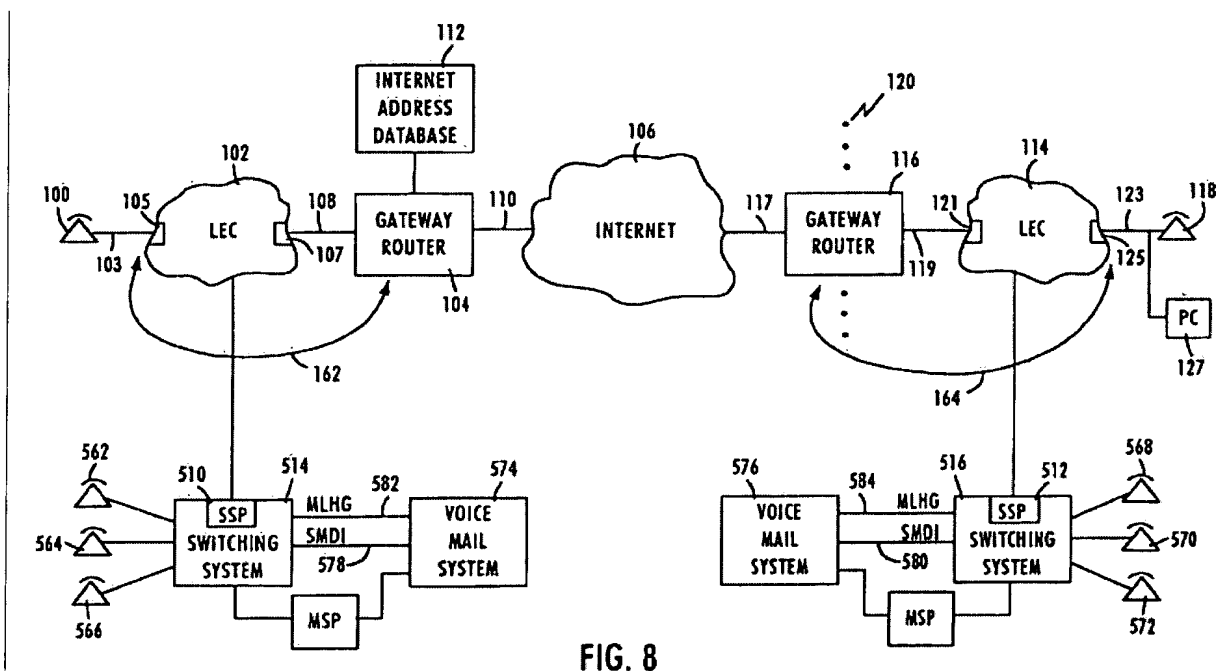


FIG. 8

The Examiner first asserts that the “telephone 100” in White ‘890 is Applicants’ subscribers. Unlike White ‘890, Applicants’ claim 1 provides for a plurality of subscribers, a switch interconnecting the plurality of subscribers, a gateway and at least one multi-line hunt group connected to the switch and the gateway. The telephones in White ‘890 are connected to a local exchange carrier (LEC 120) in a conventional fashion — without any multi-line hunt group — as provided in White ‘890 at column 7, lines 47-63, reproduced as follows:

A telephone 100 is connected to a Local Exchange Carrier (LEC) 102 by a conventional local loop 103 which normally would consist of a twisted pair to an end office 105. The Local Exchange Carrier or Telco may be either a Bell Operating Company (BOC) or an independent (e.g., GTE) which provide local transmission services. In order to provide telephone services according to the invention the LEC 102 is connected to a gateway router 104 which in turn is connected to the Internet 106. The gateway router 104 may be regarded as an ISP's gateway mechanism. The ISP may or may not be a part of the LEC. In a broad sense the gateway router 104 is equivalent to the router 85-87 shown in FIG. 3. The router 104 is connected to an end office switch 107 which is the exit from the LEC cloud 102. The connection between the router and end office switch may be a T1 trunk 108.

The Examiner also asserts that the “end office switch 107” of White ‘890 is Applicants’ “switch interconnecting the plurality of subscribers” and that the “gateway router 104” of White ‘890 is Applicants’ “gateway receiving the plurality of voice communication lines and the at least one signaling line for each multi-line hunt group, the gateway interfacing each multi-line hunt group and the communication network” as provided in claim 1. This must mean that the “connection between the router and end office switch” 108 of White ‘890 is Applicants’ multi-line hunt group. The only reference to this connection in the entirety of White ‘890 is reproduced above. There is no teaching or suggestion that this connection is anything other than a standard T1 trunk, which is not a multi-line hunt group.

It is interesting to note that Figure 8 of White ‘890 includes a multi-line hunt group (MLHG 582). This multi-line hunt group is part of a conventional, prior art system as described by Applicants at page 1, lines 12-24, reproduced as follows:

Typically, a multi-line hunt group is supported by a switch. A plurality of users are connected to the switch. The

switch receives incoming calls and determines over which communication line of the multi-line hunt group the call will be transmitted. Multi-line hunt groups may be used at any service site supporting multiple resources. Examples include voicemail services, unified messaging, call centers, fax centers, data distribution centers, and the like.

Problems with multi-line hunt groups arise when users are located a great distance away from service sites. Subscribers accessing a remote service may then incur long distance charges. Such charges increase the cost of the service, making the service less attractive to users. One solution is to provide multiple copies of the service site at local locations. However, service equipment is often expensive, again resulting in increased costs to the user. Further, multiple local sites are difficult to maintain and may still require long distance inter-site communication.

This is exactly what is shown in Figure 8 of White '890. White '890 shows separate service equipment at each site. Moreover, it is clear that White '890 discloses shipping telephone calls over the Internet (106) as separate calls, not as part of a multi-line hunt group. Telephone calls are placed into multi-line hunt groups only after they are received at a local switch (512, 514). Thus, despite having many of the same components disclosed by Applicants, White '890 fails to recognize the problem solved by Applicants.

The Examiner, recognizing this shortcoming in White '890 but ignoring the failure in White '890 to even acknowledge the problem, attempts to shoehorn White '490 into White '890.

The difference between Applicants invention and White'890 reference is that the gateways interfaces a hunt group in lieu of T1 trunks 108 and 119.

However, White'490 discloses in the same field of endeavor, an Internet access plant 80 connected to a central office switch 52 via a hunt group of lines 82. See column 15, lines 6-13.

The passage cited by the Examiner is reproduced as follows:

The Internet access plant of a public Internet service provider (ISP) 80 is connected to the central office switch 52 via a hunt group of lines 82. The ISP facility may be of the nature of that shown in FIG. 1 but is here simplified by showing only the representation of a modem pool 84, host or server 86, and router 88. The router 88 is connected to a gateway router (not shown) to connect to the Internet shown as a cloud 90.

White '490 deals with the problem of overload protection for the Internet service provider. White '490 discloses using the AIN signaling system, and not the Internet access plant, to handle call signaling for relieving congestion on the Internet service provider. This is described generally at column 6, lines 27-34, reproduced as follows:

The present invention provides an arrangement in a public telephone network offering intelligent services for automatically and dynamically redirecting calls to a provider of access to an internetwork of computer networks such as the Internet. The present invention takes advantage of the call processing and intelligence gathering functions of an intelligent network, also referred to as an advanced intelligent network (AIN), to provide a flexible arrangement to react to the load being delivered to an Internet access provider.

A simplified flow diagram for the operation of White '490 is shown in Figure 8, which is described from column 17, line 34, through column 18, line 23, which ends with the following paragraph:

At step S4 the ISCP determines from ISP current command table in the IP the action to be taken with respect to the call in progress. The ISCP thereupon sends a TCAP response to the originating SSP end office at step S5. At step S6 the originating SSP executes the command. Such execution may comprise connecting the call to the ISP dial-up number, redirecting the call via an alternate route, or sending a busy signal to the caller. If the action taken comprises redirecting the call, this is undertaken in conjunction with action in the AIN as previously described.

Once again, all signaling takes place within the AIN.

Neither White '490 nor White '890 teach or fairly suggest Applicants' gateway which receives subscriber calls in a multi-hunt group and transmits those calls over an IP network. Claims 2, 3, 5-7 and 10-14 depend from claim 1 and are therefore also patentable.

Claims 15-22

Independent claim 15 provides a communication system for transmitting audible messages over an IP-enabled communication network. The system includes a locality of subscriber units, a switch routing traffic outside of the locality of subscriber units over at least one multi-line hunt group and a gateway in communication with each multi-line hunt group and

the communication network. Each multi-line hunt group includes a plurality of voice communication lines and at least one signaling line carrying signaling data associated with calls through the voice communication lines. The gateway converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

The Examiner rejected claim 15 as being an obvious combination of "Admitted prior art," White '490 and White '890. The Examiner admits that the "admitted prior art does not disclose converting voice and signaling received over the hunt group lines." The Examiner proposes White '890 to supply this teaching at page 10, reproduced as follows:

However, White '890 discloses converting voice and signaling to a TCP/IP packet over the data network 106 using a gateway router 104. See column 8, lines 58-67 and column 9, lines 1-5.

The passage cited by the Examiner is reproduced as follows:

According to the invention, the Internet address database 112 reads the area code and NXX number of the dialed digits and extracts from its tables the IP address of the gateway router 116, which serves the called area and exchange via LEC 114. This IP address is delivered to the gateway router 104. The router uses the address to dispatch across the Internet 106 a TCP/IP packet which bears that IP address and which also includes the complete set of dialed telephone number digits identifying the called telephone station 118.

The destination gateway router 116 in turn delivers the information in that packet to the LEC 114. Since the information includes the complete telephone number of the telephone station 118, the LEC 114 is in command of all necessary data to connect to that station. This methodology permits the establishment of the call without requiring communication between the LECs 102 and 114 other than through the Internet, and without requiring the maintenance of a full global IP address database on the source end at 112.

As illustrated in Figure 8, this passage describes setup for a single call initiated from a single telephone 100 over a single connection loop 103. There is no switch disclosed in White '890 which routes traffic outside of the locality of subscriber units over a multi-line hunt group. The Examiner recognizes this deficiency in White '890 by attempting to combine White '490 on page 10, reproduced as follows:

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to have the conversion method of White '890 used in the ISP of White '490 so that the admitted prior art voice services can be extended using the Internet. The advantage would be the provisioning of extended voice services using the Internet while taking advantage of the already established hunt group infrastructures.

White '490 discloses selecting between different Internet service providers using only AIN for signaling. There is no suggestion for using the Internet to process voice signals or signaling information from a multi-line hunt group. White '890 discloses only processing single phone calls. There is no teaching or suggestion for signaling required by calls switched onto a line in a multi-line hunt group (where the line entering the gateway may have a different number than the original calling number).

In addition, neither White '490, White '890 or "Admitted prior art" teaches or suggests in any manner a gateway which handles multiple voice lines and the signaling unique to a multi-line hunt group. The Examiner has therefore failed to establish a prima facie case of obviousness. Claims 16-18 and 20-22 depend from claim 15 and are therefore also patentable.

Claims 23-30

Independent claim 23 provides a method of communicating over an IP-enabled communication network. Information is received from at least one of a plurality of subscribers. At least one of a plurality of voice communication lines and at least one signaling line in a multi-line hunt group are determined for carrying the received information and associated signaling. Information on each of the voice communication lines and signaling lines is formatted into a format compatible with the communication network. The formatted information is sent over the communication network.

The Examiner rejected claim 23 using the same argument as for claim 15. While not admitting that claim 23 has the same scope as claim 15, Applicants believe that claim 23 is patentable for the same reasons as provided for claim 15 above. Claims 24-26 and 28-30 depend from claim 23 and are therefore also patentable.

Claim 31

Independent claim 31, as amended, provides a communication system including an IP-enabled communication network, at least one remote site connected to the communication network and at least one service site connected to the communication network. Each remote site includes a switch interconnecting a plurality of subscribers, at least one multi-line hunt group connected to the switch and at least one wide area network access device interfacing each multi-line hunt group and the communication network. Each multi-line hunt group includes a plurality of voice communication lines and at least one signaling line carrying signaling data. Each service site includes a service platform providing voice services, a switch connected to the service platform, at least one multi-line hunt group connected to the switch, and at least one wide area network access device interfacing each multi-line hunt group and the communication network.

The Examiner rejected claim 31 using the same argument as used in rejecting claim 1. Without admitting that claim 31 has the same scope as claim 1, Applicants believe that claim 31 is patentable for the same reasons provided for claim 1 above.

Claim 32

Independent claim 32 provides a communication system for transmitting audible messages over an IP-enabled communication network including a locality of subscriber units, a switch interconnecting the subscriber units and at least one wide area network access device in communication with each multi-line hunt group. The switch routes traffic outside of the locality of subscriber units over at least one multi-line hunt group including a plurality of voice communication lines and at least one signaling line carrying signaling data. Each wide area network access device converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

The Examiner rejected claim 32 using the same argument as used in rejecting claim 15. Without admitting that claim 32 has the same scope as claim 15, Applicants believe that claim 32 is patentable for the same reasons provided for claim 15 above.

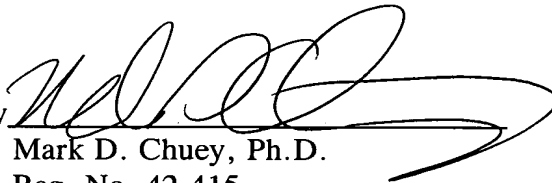
Claims 1-3, 5-7, 10-18, 20-26 and 28-32 are pending in this application. Applicants believe these claims meet all substantive requirements for patentability and respectfully request that this case be passed to issuance. No fee is believed due by filing this paper. However, any fee due may be withdrawn from Deposit Account No. 21-0456 as specified in the Application Transmittal.

The Examiner is invited to contact the undersigned regarding any aspect of this case.

Respectfully submitted,

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